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Sewage Sludge Trials

(See page 6)

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COAL REFUSE BEFORE VEGETATION PROJECT

SLUDGE SUPPORTING VEGETATION
51 DAYS AFTER SEEDING

July – August 1973

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Environmental Coordination Services Established

An Environmental Coordination Services has been formed within Alberta Environment to help integrate environmental policies and programs with other government objectives.

Under the leadership of H. W. Thiessen, Assistant Deputy Minister, the new service consists of three administrative divisions which are responsible for environmental coordination, land inventories, public participation, remote sensing, land conservation and reclamation, environmental impact assessments, land purchases and restricted development.

INTERDEPARTMENTAL RELATIONS DIVISION

The Interdepartmental Relations Division, directed by K. R. Smith, is attempting to achieve coordination between government departments where environmental factors are involved. The Alberta segment of the Man and Resources Program is being coordinated by this division. This program encourages public participation on environmental matters to assure better communication between the government and the public.

The Interdepartmental Relations Division is also responsible for managing the Alberta section of the Canada Land Inventory Program, which is being expanded to include, in addition to all settled areas of the province, the unsettled areas in more remote parts of the province. All inventory work is to be completed by next summer. This inventory provides the ecological basis for environmental impact assessments.

The national Remote Sensing Program is also coordinated in Alberta by the Interdepartmental Relations Division. This program, run in conjunction with the ERTS space program, uses a type of aerial photography designed to measure energy wavelengths which emanate from all matter. With this type of information specialists can look at the vegetation and determine such things as the aridity of an area or the incidence of disease in a stand of timber or crop of grain. They can also determine the location of crops suffering from nitrogen deficiencies.

Industry liasion is another important responsibility of this division. As many environmental regulations have significant effect on industry, industrial leaders must be consulted when these regulations are being drafted.

LAND CONSERVATION AND RECLAMATION DIVISION

The Land Conservation and Reclamation Division, directed by D. G. Harrington, is basically responsible for the administration and enforcement of the new Land Surface Conservation and Reclamation Act, passed during the last session of the Alberta Legislature.

This new act, portions of which became effective July 1st, will ultimately replace the Surface Reclamation Act which currently regulates industrial land uses. The old act applies only to surveyed areas of the province, while the new act applies to all areas.

Under the new act and its regulations, the emphasis will be on the prevention of environmental disturbances, rather than reclamation after damage has taken place.

Applications for industrial development which might disturb the land surface will be examined by personnel in the Land Conservation and Reclamation Division and be referred to other departments including the Department of Lands and Forests. These land conservation specialists will then determine whether or not a permit can be granted for the proposed development, or what restrictions must be imposed on the development.

This division is also responsible for certification of all industrial sites where reclamation has been effected. To ensure that adequate reclamation will take place, the division can require that industry make a security deposit, which would be returned as reclamation proceeds. Environmental Impact Assessments can also be requested where the degree of surface distrubance warrants detailed analysis.

LAND ASSEMBLY DIVISION

The Land Assembly Division, for which a director has yet to be named, administers the province's land assembly and restricted development areas programs.

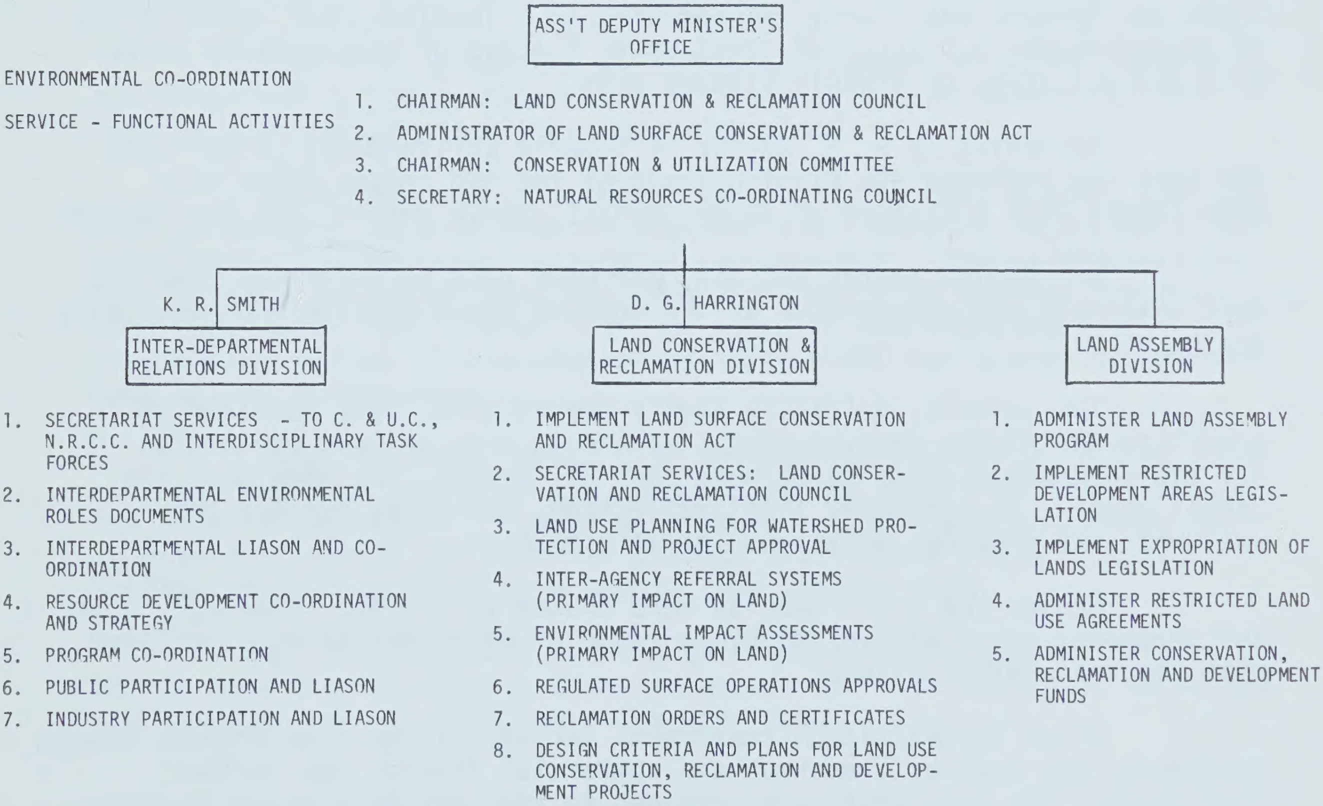
The land assembly program includes the purchasing of land for recreation development; the purchasing of patented lands in forest areas for reforestation, and the purchase of land for water resource development.

In addition, this division is responsible for negotiating agreements for reclamation of abandoned industrial sites where the company or persons responsible for the site cannot be determined.

Under present legislation, the Land Assembly Division has the power to enter into agreements with landowners to encourage them to use land in a specific manner. For example, the division can pay landowners to retain forest cover if it is felt this is desirable for watershed protection.

Through the Restricted Development Areas program, this division has an overriding authority on land zoning and can restrict development if environmental factors are threatened.

H. W. Thiessen, the Assistant Deputy Minister responsible for the new Environmental Coordination Services, is a native of Lethbridge and has been employed by the government since 1955 in various capacities of land management. Since 1966 he has been Chairman of the Interdepartmental Conservation and Utilization Committee which is a senior advisory body to the government representing 12 government departments. He will continue to hold this position in addition to the new appointment.



ENVIRONMENTAL CO-ORDINATION

SERVICE - FUNCTIONAL ACTIVITIES

ASS'T DEPUTY MINISTER'S OFFICE

1. CHAIRMAN: LAND CONSERVATION & RECLAMATION COUNCIL
2. ADMINISTRATOR OF LAND SURFACE CONSERVATION & RECLAMATION ACT
3. CHAIRMAN: CONSERVATION & UTILIZATION COMMITTEE
4. SECRETARY: NATURAL RESOURCES CO-ORDINATING COUNCIL

K. R. SMITH

INTER-DEPARTMENTAL RELATIONS DIVISION

1. SECRETARIAT SERVICES - TO C. & U.C., N.R.C.C. AND INTERDISCIPLINARY TASK FORCES
2. INTERDEPARTMENTAL ENVIRONMENTAL ROLES DOCUMENTS
3. INTERDEPARTMENTAL LIASON AND CO-ORDINATION
4. RESOURCE DEVELOPMENT CO-ORDINATION AND STRATEGY
5. PROGRAM CO-ORDINATION
6. PUBLIC PARTICIPATION AND LIASON
7. INDUSTRY PARTICIPATION AND LIASON

D. G. HARRINGTON

LAND CONSERVATION & RECLAMATION DIVISION

1. IMPLEMENT LAND SURFACE CONSERVATION AND RECLAMATION ACT
2. SECRETARIAT SERVICES: LAND CONSERVATION AND RECLAMATION COUNCIL
3. LAND USE PLANNING FOR WATERSHED PROTECTION AND PROJECT APPROVAL
4. INTER-AGENCY REFERRAL SYSTEMS (PRIMARY IMPACT ON LAND)
5. ENVIRONMENTAL IMPACT ASSESSMENTS (PRIMARY IMPACT ON LAND)
6. REGULATED SURFACE OPERATIONS APPROVALS
7. RECLAMATION ORDERS AND CERTIFICATES
8. DESIGN CRITERIA AND PLANS FOR LAND USE CONSERVATION, RECLAMATION AND DEVELOPMENT PROJECTS

LAND ASSEMBLY DIVISION

1. ADMINISTER LAND ASSEMBLY PROGRAM
2. IMPLEMENT RESTRICTED DEVELOPMENT AREAS LEGISLATION
3. IMPLEMENT EXPROPRIATION OF LANDS LEGISLATION
4. ADMINISTER RESTRICTED LAND USE AGREEMENTS
5. ADMINISTER CONSERVATION, RECLAMATION AND DEVELOPMENT FUNDS

Sewage Sludge For Reclamation

Sewage sludge, a serious problem in urban areas may prove to be a valuable resource in land reclamation projects in the future.

Alberta Environment is currently studying the effects of sewage sludge in comparison with other fertilizers on vegetation plots on coal refuse piles near Blairmore in south-western Alberta.

The experiment, a joint project of Alberta Environment, Alberta Lands and Forests and Scurry Rainbow Oil Ltd., involves coal refuse piles of approximately 3.5 acres of level area; 5 acres of intermediate slope area and 4.5 acres of steeply sloping area.

According to H. F. Regier of Alberta Environment, Lethbridge, the tops and intermediate sloping areas of the two refuse piles have been seeded with a mixture of three cereals, three grasses and two legumes.

Mr. Regier states the mixtures were used in the hopes that the most adaptable and competitive of the species would survive and eventually dominate.

The cereals, initially highly competitive, were required to stabilize the highly erosive coal slag and to provide some protection for the vulnerable grass seedlings, says Mr. Regier. He adds that the cereal cover also increases light reflection, decreases surface temperatures, and provides additional organic matter.

Legume and grass species were chosen to provide relatively quick and permanent cover within the broad range of microconditions associated with the coal refuse piles.

Pilot fertilization treatments include sludge from primary sewage treatment, cow manure, limestone and commercial 16-20-0 and 14-14-7 fertilizer. The treatments are arranged so they may be assessed independently or in combination.

The trial plots are irrigated to aid germination and growth; to temporarily reduce the coal dust problem, and to cool the coal surface which reaches temperatures lethal to emerging seedlings. To date the sludge treatment is far superior to the others.

According to Mr. Regier, results obtained so far indicate reclamation projects may be a reasonable solution to the problem of sewage sludge disposal. However, he adds, "it will take at least two years to accurately assess the effectiveness of this method of utilization."

Auto Body Collection Program

A $100,000 program to reclaim derelict auto bodies collected at points outside the cities of Edmonton and Calgary has been given Cabinet approval.

According to Hon. W. J. Yurko, Environment Minister, derelict vehicles from outlying centers are not being recycled because of the cost of transporting them to a recycling plant.

During Alberta Littercheck Week early in May, Alberta Environment in cooperation with Alberta Highways and Transport collected 14,000 vehicles in storage sites throughout the province. Approximately 9,000 are in large groups at locations enabling them to be removed for recycling at a reasonable cost. Under this new program, the department will call for tenders for the transportation of these 9,000 car bodies to approved type balers or shredders.

This, says Mr. Yurko, will provide Alberta car recycling firms with an immediate supply of old cars and at the same time help clean up the Alberta landscape. It will also encourage more municipalities to voluntarily provide and maintain storage sites where the public can legally deposit derelict cars rather than abandon them.

Mr. Yurko also stated the government is considering future action of a more permanent nature to remove the vast number of abandoned and derelict cars from all over the province.

Air And Water Pollution Prevention

The prevention of air and water pollution by industrial and municipal plants is the main concern of the Standards and Approvals Division of Alberta Environment.

Recognizing that it is cheaper and more efficient to design pollution control devices into a new plant, than to install them after a plant has started operation, the division is concentrating its efforts on working with industry and municipal governments in the initial stages of planning new plants and industrial installations.

The division is responsible for the processing of applications for approval under the Clean Air and Clean Water Acts, and for the development of performance standards for specific types of projects.

During 1972 these two Acts were amended, with the most significant changes being the introduction of a permit (for construction) and a licence (for operation or use) system, rather than the single approval process previously in use.

In granting construction permits, the division works directly with the plant designers to lay down criteria so emissions are decreased or eliminated for the prevention of air, water or soil pollution. The "Permit To Construct" includes a list of terms, conditions and requirements which state the type of equipment to be installed, any special modifications which have to be made; the height of exhaust stacks; the air or water sampling devices which must be installed, and any other factors which are deemed necessary for construction of a clean plant.

In granting a "Licence To Operate Or Use" the division also lays down a firm list of terms, conditions and requirements which must be followed in the operation of the plant. These include such things as maximum production; special equipment which must be used; methods to be used to dispose of wastes; maximum rate of release of contaminants, and the steps which must be taken to clean the area if the plant is moved or shut down.

Plants already in existence are gradually being brought under the licencing system in three stages.

Under the Clean Air (General) Regulations, OC 215/73 and the Clean Water (General) Regulations, OC 216/73, industrial and municipal plants operating without a certificate or approval from the Provincial Board of Health must apply for a licence prior to January 1st, 1975. Those with a certificate or approval issued by the Provincial Board of Health or a Clean Air or Clean Water Act approval with no expiry date, must apply for a licence before January 1st, 1976; while those plants with an approval, permit or licence issued by the Energy Resources Conservation Board must apply for a licence prior to January 1st, 1977.

Licences issued under the recently amended act may be granted for a period of up to five years and must be renewed when expired.

Because of the variation in environmental conditions and requirements every construction and licencing application is evaluated on its own merits. The numerous variables such as population density, wind direction and velocity, terrain, rate of flow in the receiving river, soil conditions, precipitation, temperature variation, etc., make the setting of absolute standards an impractical task. As a result, the department is working on establishing variable standards which will protect the public in a realistic manner, and not place impossible demands on industry.

In addition to supervising construction and setting standards for operation, the Standards and Approvals Division cooperates with the Division of Pollution Control to maintain a watch on its licencees to ensure they continue to operate under the guidelines set out in the licence.

Conditions for environmental monitoring are set out in the licence and the monthly, quarterly and annual reports ensure the division a constant check on the maintenance of environmental standards.

Biting Flies Coordinator Appointed

Mr. David Pledger has been appointed to fill the newly-created position of Coordinator of Biting Flies with Alberta Environment.

The position, within the Pesticide Chemicals Branch, was established to provide advisory assistance and a coordinated approach to biting fly control in Alberta. To date, the emphasis has been on mosquitos.

According to Mr. Pledger mosquito control programs should be based on the biology of the mosquito species in the proposed control area. Thorough mapping of mosquito larvae development sites with frequent larval surveys and positive species identification determines where and when control measures are required.

Mr. David Pledger

If chemical control is necessary, he says, a method of application can be determined to carry out an effective control with least disturbance to the environment or non-target organisms.

In helping Alberta municipalities plan or upgrade their mosquito control program, Mr. Pledger will work closely with local governments through council meetings and in the field with personnel carrying out the control program.

He will help the local control foreman with larval surveys to determine where and under what circumstances a mosquito population may result, as well as the type of pesticides and methods of application that would be suitable for use.

Total and per capita costs are vital factors in the establishment of a municipal mosquito control program, says Mr. Pledger. Many municipalities wish to have a mosquito control program but cannot justify becoming involved with sophisticated or time consuming practices. They prefer capsules containing pesticides which can be deposited in assumed breeding places or the use of thermal fogging for adult mosquitos, which are relatively unsatisfactory methods of control.

Mr. Pledger adds that some municipalities are willing to control mosquitos within their boundaries if the surrounding municipal bodies would also undertake a mosquito control program.

To help overcome these problems, Mr. Pledger will work with concerned municipalities to help them plan and conduct their mosquito control programs. In addition, he will help co-ordinate the activities of adjacent municipal bodies wishing to approach the problem on a regionalized basis.

A pilot project for a regionalized and coordinated approach to mosquito control in the Edmonton area is under investigation. The results should be known this fall. If successful, fourteen other urban areas are to be approached with the concept of regionalized mosquito control.

Environmental Information Foundation

A proposal for a unique environmental information and service referral center is under study by Alberta Environment.

The proposed Environmental Information Foundation would be adopted to meet the needs of citizens of other provinces and eventually form the basis for a national environmental information network and referral system.

Hon. W. J. Yurko, Environment Minister, notes that many people are concerned and want to act on environmental issues but find themselves hampered by a lack of information or a lack of knowledge on where to get information.

The proposed Foundation would act as a clearing house for environmental information and link those who want specific environmental information with people or agencies that can provide it. The study will explore the feasibility of an autonomous non-profit organization providing this kind of service.

Ms. Penelope Bonnett has been hired on a contract basis for one year to conduct the feasibility study. Well-known to both government and private environmental groups, she will be contacting them about information needs and how they might be provided by an information foundation.

The need for information referral systems were strongly recommended by the United Nations Conference on the Human Environment in Stockholm, the Man and the Biosphere Program and by citizens who have been involved in the Man and Resources Program. The Canadian Council of Resource and Environment Ministers recently agreed that its secretariat would provide a referral service on environmental data to all provincial governments.

On the basis of the feasibility study the government will consider implementation of the Environmental Information in 1974.

Environmental Relocation Grants

Assistance in relocation of industries for environmental reasons will be granted by Alberta Environment.

The aim of the relocation program is to preserve industries and jobs while ensuring that these industries meet pollution control regulations. It is based on the premise that the expenditure required to meet pollution control requirements might be more effectively incorporated into new plants. All decisions to relocate a plant shall be made entirely by the industrial enterprise itself.

The industries eligible for relocation grants are those which face excessive economic pressures as a result of environmental restrictions. These industries will be eligible for grants totalling 25 to 50 per cent of their appraised value not including land. Industries appraised over a million dollars will be considered separately.

Amount of the grant will be calculated by consideration of the effective life of the existing plant as compared to the effective life of the new plant.

To avoid future industrial relocations due to environmental factors, the provincial government is working toward more advanced land use and industrial planning on the periphery of urban areas. It is hoped this will help eliminate conflicts between new industries, business enterprises and residential areas.

Effective Pesticide Control

Local government involvement is essential for effective administration and enforcement of the Agricultural Chemical Act, says L. K. Peterson of Alberta Environment.

Mr. Peterson, Head of the Pesticide Chemicals Branch, points out that chemical-pesticides are probably used by more individuals today than any other environmental contaminant. He adds that personal views on usage range from a desire for complete banning of all forms of control of all pests, to the complete lack of interest in the ramifications of the use of these chemicals and the effects of them on man and his environment.

Because of this widespread usage a more rational approach to control pesticides is necessary, and the Act requires that every municipality or special area must appoint sufficient inspectors to enforce the act and its regulations.

According to Mr. Peterson the Pesticide Chemical Branch coordinates the activities and responsibilities of appointed municipal inspectors and acts as an advisor and back-up service on all problems associated with the application, use, storage, handling, display, transport and disposal of all chemical control products used as biocides.

The branch is also equipped with provincially appointed inspectors to enforce the act or regulations where local governments have special problems in personnel or administration.

Mr. Peterson adds that the branch also continuously monitors the total environment within all municipalities by licenses, permits and through random and specific sample analysis. Close cooperation and special studies with local governments and the local people enables the branch to obtain direct feedback on all control programs at all levels of concern.

"These data and information provide the most reasonable and safest controls applied to import, export and domestic products for the people of Alberta as well as the safest protection and concern of our natural environment," states Mr. Peterson.

Senior Citizens Volunteer Service

A program to utilize the experience, skills and capabilities of retired professional and technical people will be established this fall by Alberta Environment.

Commenting on the need for such a program, Honourable W. J. Yurko, Environment Minister, said, "a valuable human resource is being wasted. This is unfortunate, illogical and unnecessary.

"The Senior Citizens Volunteer Service would provide a great deal of personal satisfaction in knowing that they were not discards in the stream of life."

Examples of the type of work could be:

1. The preparation of environmental bulletins, television scripts, educational material for schools, etc.

2. The researching of local history and points of interest for hiking trails leading out from provincial parks and the preparation of signs.

3. A lawyer may review and prepare a report on some jurisdictional matter; or prepare a case history on a case which should be recorded in the archives.

4. An agrologist or forester may advise on reclamation projects at the Athabasca Tar Sands and stay a week or two to help summer students; or work in a greenhouse or similar project.

5. A retired soil expert could examine pipeline river crossings and evaluate them.

6. A retired biologist may review those environmental impact statements which are five years old and evaluate the projections with the facts after that period of time; or work with a retired veterinarian or pharmacist on pesticide matters.

7. A retired engineer could evaluate processes and prepare reports; or work with a computer expert to devise new techniques for calculating pollution indices.

The length of time worked and hours of work will be determined by the volunteer to suit their health and pattern of retirement living.

The volunteer would receive $1.00 a year and travelling expenses incurred within the province.

The Senior Citizens Volunteer Service will be administered by the GENERAL SERVICES DIVISION, in cooperation with other Divisions, of Alberta Environment.

Does Edmonton Smell?

Yes, says the report of an odor survey conducted for Alberta Environment in 1972 by Stanley Associates Engineering Ltd.

The Edmonton area has "a significant level of odor occurences which at times is sufficiently objectionable to disturb many people," says the report.

It adds that although Edmonton does not have an extremely serious odor pollution problem, there is a definite concern and awareness of the problem, to the extent that most residents feel that stronger measures should be taken to control pollution.

The report indicates that automotive exhaust is the most common and wide-spread contributor to noticeable odor in the Edmonton area but is not considered offensive to most residents.

What ranked next in order of frequency, however, were considered offensive. Of the 522 telephone complaints from February-December, 1972, 26 per cent involved meat processing smells, 24 per cent chemical smells, and 16 per cent involved sewage odors.

Generally, the southeast section of Edmonton has the worst odor pollution with northeast Edmonton ranking a close second. Both areas experience frequent odor occurences and are particularly affected by chemical and meat processing odors.

Highway Litter Clean-Up

Seven Canadian provinces and one territory report spending $2,107,652 on highway litter clean-up and maintaining litter receptacles along highways during 1972.

In addition, millions of dollars are spent each year by Canadian taxpayers to clean litter from parks, playgrounds, school grounds, city streets and other public property.

Ontario topped all provinces polled and spent one million dollars on highway clean-up in 1972, British Columbia came second with $500,000 and Alberta third with $164,792. No statistics were received from Quebec, Prince Edward Island or the Northwest Territories and Saskatchewan reported that statistics were not available.

All provinces, with the exception of Newfoundland, Nova Scotia, and Ontario, reported that they utilized litter receptacles along roadsides.

British Columbia reports that their novel "frog-head" litter receptacle which replaced their "Garbage Gobbler" does reduce littering. Manitoba too feels that littering is reduced through their innovative "Orbit" shaped receptacles through which travellers are asked to "Put your garbage in Orbit".

Nova Scotia and Ontario have discontinued the use of roadside litter receptacles due to the danger of highway traffic accidents as cars move in and out of traffic to stop at receptacles. Receptacles, in both provinces, are placed along existing roadside picnic sites and parks. Nova Scotia has placed a heavy emphasis on a program of education, claiming a decrease in highway clean-up costs from $250,000 in 1971 to $135,000 in 1972.

Littering is a problem in every province of Canada as individuals thoughtlessly pollute our roadsides, scenic spots, parks, and many other areas.

Several provinces have mounted educational campaigns, realizing that the litter-problem can only be solved by changing public attitudes. The largest anti-litter organization in Canada is located in British

Columbia and Alberta, where Outdoors Unlittered (B.C.) and Outdoors Unlittered (Alta.) are working to change attitudes towards littering.

Both organizations state that through education, legislation, the reduced proliferation of containers and packaging and adequate disposal facilities, the littering problem can be solved.

Littering is a large problem. Statistics have shown that more than 50 per cent of the population litters. Most litterers do not realize that they litter, blaming others.

By kicking the litter habit Canadians can improve their environment while saving themselves millions of dollars.

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Honourable W. J. Yurko
Minister

Dr. E.E. Ballantyne
Deputy Minister

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